

Contents

Part I Innovative Technology in Mental Healthcare

| | |
|---|---|
| Non-linear EEG Modelling by Using Quadratic Entropy for Arousal Level Classification | 3 |
| Arturo Martínez-Rodrigo, Raúl Alcaraz, Beatriz García-Martínez, Roberto Zangróniz and Antonio Fernández-Caballero | |

| | |
|--|----|
| Emotional Induction Through Films: A Model for the Regulation of Emotions | 15 |
| Luz Fernández-Aguilar, José Miguel Latorre, Laura Ros, Juan Pedro Serrano, Jorge Ricarte, Arturo Martínez-Rodrigo, Roberto Zangróniz, José Manuel Pastor, María T. López and Antonio Fernández-Caballero | |

| | |
|--|----|
| Application of the Lognormal Model to the Vocal Tract Movement to Detect Neurological Diseases in Voice | 25 |
| Cristina Carmona-Duarte, Réjean Plamondon, Pedro Gómez-Vilda, Miguel A. Ferrer, Jesús B. Alonso and Ana Rita M. Londral | |

| | |
|--|----|
| Exploring and Comparing Machine Learning Approaches for Predicting Mood Over Time | 37 |
| Ward van Breda, Johnno Pastor, Mark Hoogendoorn, Jeroen Ruwaard, Joost Asselbergs and Heleen Riper | |

| | |
|--|----|
| Cross-Cultural Telepsychiatry: An Innovative Approach to Assess and Treat Ethnic Minorities with Limited Language Proficiency | 49 |
| Davor Mucic | |

Part II Biomedical Engineering, Trends, Research and Technologies

| | |
|---|----|
| A Comparison of Performance of Sleep Spindle Classification Methods Using Wavelets | 61 |
| Elena Hernandez-Pereira, Isaac Fernandez-Varela and Vicente Moret-Bonillo | |

Evaluation of Head-Mounted Displays for Macular Degeneration: A Pilot Study 71
Howard Moshtael, Lanxing Fu, Ian Underwood and Baljean Dhillon

Method of Infrared Thermography for Earlier Diagnostics of Gastric Colorectal and Cervical Cancer 83
B. Dekel, A. Zilberman, N. Blaunstein, Y. Cohen, M.B. Sergeev, L.L. Varlamova and G.S. Polishchuk

Tijuana’s Sustainability for Healthcare Measurement Using Fuzzy Systems 93
Bogart Yail Márquez, Arnulfo Alamis, Jose Sergio Magdaleno-Palencia, Karina Romo, Felma González and Sergio Mendez-Mota

Intelligent System for Learning of Comfort Preferences to Help People with Mobility Limitations 99
Sandra López, Rosario Baltazar, Lenin Lemus Zuñiga, Miguel Ángel Casillas, Arnulfo Alanis, Miguel A. Mateo Pla, Víctor Zamudio and Guillermo Méndez

Design of a Middleware and Optimization Algorithms for Light Comfort in an Intelligent Environment 111
Teresa Barrón Llamas, Rosario Baltazar, Miguel A. Casillas, Lenin Lemus, Arnulfo Alanis and Víctor Zamudio

Autism Disorder Neurological Treatment Support Through the Use of Information Technology 123
Esperanza Manrique Rojas, Margarita Ramírez Ramirez, Hilda Beatriz Ramírez Moreno, Maricela Sevilla Caro, Arnulfo Alanís Garza and José Sergio Magdaleno Palencia

Information Technologies in the Area of Health and Use of Mobile Technologies in the Area of Health in Tijuana, Baja California 129
Margarita Ramírez Ramírez, Esperanza Manrique Rojas, Nora del Carmen Osuna Millán, María del Consuelo Salgado Soto, José Sergio Magdaleno Palencia and Bogart Yail Márquez Lobato

Part III Advances in Data and Knowledge Management for Healthcare

Automatic Quantification of the Extracellular Matrix Degradation Produced by Tumor Cells 137
Nadia Brancati, Giuseppe De Pietro, Maria Frucci, Chiara Amoroso, Daniela Corda and Alessia Varone

Quantitative EEG and Virtual Reality to Support Post-stroke Rehabilitation at Home 147
Alfonso Mastropietro, Sara Arlati, Simona Mrakic-Sposta, Luca Fontana, Cristina Franchin, Matteo Malosio, Simone Pittaccio, Cristina Gramigna, Franco Molteni, Marco Sacco and Giovanna Rizzo

Towards a Sustainable Solution for Collaborative Healthcare Research 159
 Nikos Karacapilidis and George Potamias

An Ontology-Based Approach for Representing Medical Recommendations in mHealth Applications 171
 Aniello Minutolo, Massimo Esposito and Giuseppe De Pietro

Semantic Cluster Labeling for Medical Relations 183
 Anita Alicante, Anna Corazza, Francesco Isgro and Stefano Silvestri

Part IV Advanced ICT for Medical and Healthcare

A Robust Zero-Watermarking Algorithm for Encrypted Medical Images in the DWT-DFT Encrypted Domain 197
 Jiangtao Dong and Jingbing Li

A Touchless Visualization System for Medical Volumes Based on Kinect Gesture Recognition 209
 Ryoma Fujii, Tomoko Tateyama, Titinunt Kitrungrotsakul, Satoshi Tanaka and Yen-Wei Chen

Super-Resolution Technology for X-Ray Images and Its Application for Rheumatoid Arthritis Medical Examinations 217
 Tomio Goto, Takuma Mori, Hidetoshi Kariya, Masato Shimizu, Masaru Sakurai and Koji Funahashi

Bayesian Model for Liver Tumor Enhancement 227
 Yu Konno, Xian-Hua Han, Lanfen Lin, Hongjie Hu, Yitao Liu, Wenchao Zhu and Yen-Wei Chen

Fused Visualization with Non-uniform Transparent Surface for Volumetric Data Using Stochastic Point-Based Rendering 237
 Kyoko Hasegawa, Yuta Fujimoto, Rui Xu, Tomoko Tateyama, Yen-Wei Chen and Satoshi Tanaka

Part V Healthcare Support System

Automated Diagnosis of Parkinsonian Syndromes by Deep Sparse Filtering-Based Features 249
 Andrés Ortiz, Francisco J. Martínez-Murcia, María J. García-Tarifa, Francisco Lozano, Juan M. Górriz and Javier Ramírez

Post-stroke Hand Rehabilitation Using a Wearable Robotic Glove 259
 Dorin Popescu, Mircea Ivanescu, Razvan Popescu, Anca Petrisor, Livia-Carmen Popescu and Ana-Maria Bumbea

An mHealth Application for a Personalized Monitoring of One’s Own Wellness: Design and Development 269
 Manolo Forastiere, Giuseppe De Pietro and Giovanna Sannino

“White Coat” Effect Study as a Subclinical Target Organ Damage by Means of a Web Platform 279
 J. Novo, A. Hermida, M. Ortega, N. Barreira, M.G. Penedo, J.E. López and C. Calvo

Part VI Smart Medical and Healthcare Systems 2016 Workshop

GENESIS—Cloud-Based System for Next Generation Sequencing Analysis: A Proof of Concept 291
 Maider Alberich, Arkaitz Artetxe, Eduardo Santamaría-Navarro, Alfons Nonell-Canals and Grégory Maclair

Review of Automatic Segmentation Methods of White Matter Lesions on MRI Data 301
 Darya Chyzyk, Manuel Graña and Gerhard Ritter

Hygehos Ontology for Electronic Health Records 311
 Naiara Muro, Eider Sanchez, Manuel Graña, Eduardo Carrasco, Fran Manzano, Jose María Susperregi, Agustin Agirre and Jesús Gómez

Views on Electronic Health Record 323
 Manuel Graña and Oier Echaniz

Laparoscopic Video and Ultrasounds Image Processing in Minimally Invasive Pancreatic Surgeries 333
 P. Sánchez-González, I. Oropesa, B. Rodríguez-Vila, M. Viana, A. Fernández-Pena, T. Arroyo, J.A. Sánchez-Margallo, J.L. Moyano, F.M. Sánchez-Margallo and E.J. Gómez

Erratum to: Hygehos Ontology for Electronic Health Records E1
 Naiara Muro, Eider Sanchez, Manuel Graña, Eduardo Carrasco, Fran Manzano, Jose María Susperregi, Agustin Agirre and Jesús Gómez

Author Index 345



<http://www.springer.com/978-3-319-39686-6>

Innovation in Medicine and Healthcare 2016

Chen, Y.-W.; Tanaka, S.; Howlett, R.J.; Jain, L.C. (Eds.)

2016, XIV, 347 p. 121 illus., 97 illus. in color., Hardcover

ISBN: 978-3-319-39686-6